



# Fast Facts

CALIFORNIA DEPARTMENT OF HEALTH SERVICES

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## MTBE IN DRINKING WATER

### **What is MTBE?**

Methyl tertiary butyl ether (MTBE) is a chemical added to gasoline to promote more complete combustion and reduce emissions of carbon monoxide and organic compounds. The chemical adds oxygen to gasoline, which increases the temperature at which it burns in the engines and reduces the amount of harmful byproducts in the vehicle's exhaust.

Because it mixes readily with gasoline, is easily transported, has a low production cost, and has a high octane rating, MTBE has been the oxygenate of choice for California gasoline producers who face state and federal mandates to produce less-polluting gasoline.

### **MTBE and Water Supplies**

With its increased use, MTBE has been found in shallow ground water and in drinking water supplies, both in ground water and surface water sources. The most likely sources of the ground water contamination are leaking underground storage tanks and pipelines. Although MTBE is readily mixed with gasoline, it does not easily adhere to soil, and readily moves through ground water. Even though California underwent a massive effort to replace older underground storage tanks with newer ones that are much less likely to leak, some fuel releases continue to occur.

Pursuant to requirements of Health and Safety Code Section 116610, the Department of Health Services (DHS) adopted a primary and secondary maximum contaminant level (MCL). MCLs are also known as drinking water standards. In January 1999, DHS adopted a 5-parts per billion (ppb) secondary MCL for MTBE to protect consumers from taste and odor associated with MTBE in drinking water.

The primary MCL of 13-ppb, which became effective in May 2000, was derived in part from the Public Health Goal (PHG) established by Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA). OEHHA's PHG was based upon cancer risk since MTBE causes cancer in laboratory animals.

### **MTBE Testing Requirements and Results**

In 1996, DHS's Division of Drinking Water and Environmental Management, the regulator of drinking water quality in California, asked the systems it regulates to begin testing their water supplies for MTBE. DHS made the testing mandatory in February 1997. DHS has a detection level for purposes of reporting 3-ppb for MTBE.

To date, more than 7,000 drinking water sources have been tested for MTBE contamination, and only 55 of those sources reported detectable concentrations of MTBE. Of the 55, 21 are surface water bodies, many of which allow motorized watercraft activity. Unburned MTBE in engine exhaust and gasoline leaked from boats and marinas are the likely sources of MTBE in reservoirs.

Seventeen municipal drinking water sources have reported MTBE at levels greater than 13-ppb. Fifteen of these are wells in a variety of locations, including Santa Monica, South Lake Tahoe, Sacramento, and Kern County. The two surface water sources that reported MTBE at greater than 13-ppb are lakes in Los Angeles and Riverside counties.

Periodic updated activities related to MTBE in drinking water are presented on the DHS Web site: <http://www.dhs.ca.gov/ps/ddwem/chemicals/MTBE/mtbeindex.htm>.